MATHEMATICS CROSSWALK
2008 DRAFT MATHEMATICS STANDARD TO 2003 MATHEMATICS STANDARD
GRADE 1

MATHEMATICS STANDARD ARTICULATED BY GRADE LEVEL				
Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Number Sense	1	Express whole numbers to 100, in groups of tens and ones using and connecting multiple representations, including: • models, • pictures, • spoken and written words, • numerals, and • expanded notation.	1	Make a model to represent a given whole number 0 through 100.
			2	Identify a whole number represented by a model with a word name and symbol 0 through 100.
			4	Identify whole numbers through 100 in or out of order.
			5	Write whole numbers through 100 in or out of order.
			6	Construct equivalent forms of whole numbers, using manipulatives or symbols, through 99 (e.g., 15 + 5 = 10 + 10).
	2	Apply counting to 100 using different starting points by: • counting forward or backward, • counting by 5's and 10's, and • finding the missing numbers on a number line.	3	Count aloud, forward or backward, in consecutive order (0 through 100).
	3	Identify 10 more/10 less than a given number up to 90.*		

* This performance objective is new to the 2008 Draft Mathematics Standard Articulated by Grade Level.

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Number Sense	4	Compare two whole numbers and order three or more whole numbers through 100 by applying the concept of place value and using comparative language and symbols (=, ≠).	11	Compare two whole numbers through 100.
			13	Order three or more whole numbers through 100 (least to greatest or greatest to least).
	5	Identify the place value and actual value of digits for whole numbers up to 2 digits.	7	State verbally whole numbers, through 100, using correct place value (e.g., A student will read 84 as eight tens and four ones.).
	6	Recognize and compare ordinal numbers, first through tenth.	12	Use ordinal numbers through tenth.
	M02-S1C1-01	**Moved to Grade 2**	8	Construct models to represent place value concepts for the one's and ten's places.
	M02-S1C1-01	**Moved to Grade 2**	9	Apply expanded notation to model place value through 99 (e.g., 37 = 3 groups of ten + 7 units).
	M02-S1C1-06	**Moved to Grade 2**	10	Identify odd and even whole numbers through 100.
	M02-S1C1-08	**Moved to Grade 2**	14	Make models that represent given fractions (halves).
	M02-S1C1-08	**Moved to Grade 2**	15	Identify in symbols and in words a model that is divided into equal fractional parts (halves).

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Number Sense	M02-S1C1-07	**Moved to Grade 2**	16	Identify money by name and value: penny, nickel, dime, quarter, and one dollar.
	M02-S1C1-07	**Moved to Grade 2**	17	Count money through $1.00 using coins.
	M02-S1C1-07	**Moved to Grade 2**	18	Identify the value of a collection of coins using the symbols ¢ and $.
2. Numerical Operations	1	Solve contextual problems using multiple representations for addition and subtraction facts.	6	Select the grade-level appropriate operation to solve word problems.
			7	Solve word problems using addition and subtraction of 2-digit numbers without regrouping.
	2	Determine the sum and difference of numbers less than 100 by developing and using multiple strategies.	4	Add one- and two-digit whole numbers without regrouping.
			5	Subtract one- and two-digit whole numbers without regrouping.

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
2. Numerical Operations	3	Develop and use multiple strategies for addition and subtraction facts.	1	Demonstrate the process of addition through sums of 20 using manipulatives.
			2	Demonstrate the process of subtraction with minuends of 20 using manipulatives.
			3	State addition facts for sums through 18 and subtraction for differences with minuends through 9 or less.
			9	Demonstrate families of equations for addition and subtraction through 18.
	4	Solve addition/subtraction problems by applying properties: • identity property of addition/ subtraction and • commutative property of addition.	10	Demonstrate the identity and commutative properties of addition through 18.
	M02-S1C2-04	**Moved to Grade 2**	8	Count by multiples to show the process of multiplication (10s, 5s, or 2s).
	M02-S1C2-06	**Moved to Grade 2**	11	Identify addition and subtraction as inverse operations.
		REMOVED (This skill is required throughout the standard).	12	Apply the symbols: +, -, =.

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Strand 1: Number and Operations				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
2. Numerical Operations		**REMOVED (This skill is required throughout the standard).**	13	Use grade-level appropriate mathematical terminology.
	M03-S1C2-01	**Moved to Grade 3**	14	Demonstrate addition of fractions with like denominators (halves) using models.
	M03-S1C1-01	**Moved to Grade 3**	15	Demonstrate subtraction of fractions with like denominators (halves) using models.
	M02-S1C2-01	**Moved to Grade 2**	16	Add and subtract money without regrouping using manipulatives and paper and pencil, through 99¢.
3. Estimation	1	Estimate quantities, sums, or differences to 100 using multiples of 5, 10, and 25 as benchmarks.	1	Solve problems using a variety of mental computations and reasonable estimation.
	M01-S4C4-01	**Moved to Grade 1**	2	Estimate the measurement of an object using U.S. customary standard and non-standard units of measurement.

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Strand 2: Data Analysis, Probability, and Discrete Mathematics				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Data Analysis (Statistics)	1	Collect, record, organize, and display data based on questions using tally charts and pictographs.	1	Formulate questions to collect data in contextual situations.
			2	Make a simple pictograph or tally chart with appropriate labels from organized data.
			3	Interpret pictographs using terms such as most, least, equal, more than, less than, and greatest.
			4	Answer questions about pictographs using terms such as most, least, equal, more than, less than, and greatest.
			5	Formulate questions based on graphs, charts, and tables.
			6	Solve problems using graphs, charts, and tables.
2. Probability		**No performance objectives at this grade level.**		
3. Discrete Mathematics – Systematic Listing and Counting	1	Sort, classify, count, and represent objects using Venn diagrams and justify the sorting rule.*		

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Strand 2: Data Analysis, Probability, and Discrete Mathematics				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
3. Discrete Mathematics – Systematic Listing and Counting	2	Find possibilities in simple counting situations through exploration and modeling.	1	Make arrangements that represent the number of combinations that can be formed by pairing items taken from 2 sets, using manipulatives (e.g., How many ice cream cones can one make with 2 different types of ice cream and 2 different types of cones?).
4. Discrete Mathematics – Vertex-Edge Graphs	1	Color simple pictures or figures using the fewest number of colors and justify the coloring.	1	Color pictures with the least number of colors so that no common edges share the same color (increased complexity throughout grade levels).
	2	Build and explore vertex-edge graphs using concrete materials and count the number of vertices and edges in the graph.*		

Strand 3: Patterns, Algebra, and Functions				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Patterns	1	Recognize, describe, extend, create, and record repeating patterns.	1	Communicate orally a grade-level appropriate pattern.
			2	Extend simple repetitive patterns using manipulatives.
			3	Create grade-level appropriate patterns.

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Strand 3: Patterns, Algebra, and Functions				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Patterns	2	Recognize, describe, extend, create, and record growing patterns.	1	Communicate orally a grade-level appropriate pattern.
			2	Extend simple repetitive patterns using manipulatives.
			3	Create grade-level appropriate patterns.
2. Functions and Relationships		**No performance objectives in this grade level.**		
3. Algebraic Representations	1	Record equivalent forms of whole numbers to 100 by constructing models and using numbers.*		
	2	Record equivalent forms of whole numbers to 100 by constructing models and using numbers.*		
	3	Represent a word problem requiring addition or subtraction facts in an equation using the following forms: • a + b = □, • a + □ = c, • c – a = □, and • c - □ = b.	1	Use variables in contextual situations.
			2	Find the missing sum or difference in number sentences for sums and minuends through 9 (e.g., 2 + 5 = _).

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Strand 3: Patterns, Algebra, and Functions				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
4. Analysis of Change	M04-S3C4-01	**Moved to Grade 4**	1	Identify the change in a variable over time (e.g., an object gets taller, colder, heavier, etc.).
	M04-S3C4-01	**Moved to Grade 4**	2	Make simple predictions based on a variable (e.g., select next stage of plant growth).

Strand 4: Geometry and Measurement				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Geometric Properties	1	Compare and sort basic 2-dimensional and non-standard shapes and describe reasoning for sorting and resorting.	1	Use the words vertex and side when describing simple 2-dimensional geometric shapes.
			2	Identify 2-dimensional shapes by attribute (size, shape, number of sides, vertices).
	2	Identify and draw 2-dimensional geometric figures based on given attributes.	4	Name common 2-dimensional shapes (square, rectangle, triangle, circle).
			5	Draw 2-dimensional shapes (square, rectangle, triangle, circle).
	3	Describe the results of composing and decomposing 2-dimensional shapes.*		

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Strand 4: Geometry and Measurement				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Geometric Properties		**REMOVED**	3	Use concepts and terms of position and size in contextual situations: • Inside/outside, • Left/right, • Above/below/between, • Smaller/larger, and • Longer/shorter.
	M02-S4C2-01	**Moved to Grade 2**	6	Recognize where a line of symmetry divides a 2-dimensional shape into mirror images.
2. Transformation of Shapes	1	Recognize that when a figure is moved to a different place or orientation, its size and shape remain the same.	1	Recognize same shape in different positions (slide/translations).
3. Coordinate Geometry		**No performance objectives at this grade level.**		
4. Measurement	1	Compare and order objects according to length, capacity, and weight by: • directly comparing and • measuring using non-standard units (using multiple units or using one unit multiple times).	1	Compare the measurable characteristics of two objects (e.g., length, weight, size).

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Strand 4: Geometry and Measurement				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
4. Measurement	2	Estimate the length of a given object and measure actual length using the benchmark of one inch.	7	Measure a given object using the appropriate unit of measure: • length – inches, feet and yards, • capacity/volume – cups, gallons, and mass/weight – pounds.
	3	Sequence the days of the week and the months of the year.	4	Name the days of the week for yesterday, today, and tomorrow (e.g., If today is Wednesday, what day will it be tomorrow?).
			5	Name the 12 months of the year in proper order, starting with January.
			6	Name the 7 days of the week in proper order, starting with Sunday.
		REMOVED	2	Select the appropriate measure of accuracy: • length – inches, feet, • capacity/volume – cups, gallons, and • mass/weight – pounds.
	M03-S4C4-02	**Moved to Grade 3**	3	Tell time to the hour using analog and digital clocks.

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Strand 5: Structure and Logic				
CONCEPT	**2008 PO**	**ITEM DESCRIPTION**	**2003 PO**	**ITEM DESCRIPTION**
1. Algorithms and Algorithmic Thinking	M01-S5C2-03	**Moved to Grade 1**	1	Create problems based on contextual situations (addition facts up to 18 and subtraction from 9).
2. Logic, Reasoning, Arguments, and Mathematical Proof	1	Develop the problem-solving strategy of drawing a picture.*		
	2	Solve a non-routine problem by selecting and using a strategy.*		
	3	Create word problems based on addition and subtraction facts through 20.	S5C1-01	Create problems based on contextual situations (addition facts up to 18 and subtraction from 9).
		REMOVED	1	List the quantitative components found in word problems.
		REMOVED	2	Provide rationale for classifying objects according to observable attributes (color, size, shape, weight, etc.).

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